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ABSTRACT

This paper first explains the unique role and functions of educational research at a state level and how it differs from institutional research and experimental and quasi-experimental research. The unique opportunities and constraints are also elaborated. State educational research has the advantage of central and comprehensive information as well as access to very extensive information. At the same time, the maintenance of this capability is extremely cumbersome. As state educational research must be able to respond to legislative, executive, and judicial requirements on extremely tight time-lines with relatively limited resources (for example, New Jersey's requirement for thorough and efficient (T & E) educational processes in the state's schools and districts), the system must maintain comprehensive information on all components of education while being able to collect other data and perform analyses without notice. The way in which this decision oriented system operates is explicated. (Author/RC)

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USING PRODUCT AND PROCESS RESULTS FOR RESEARCH AND PLANNING: THE NEW JERSEY MODEL

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USING PRODUCT AND PROCESS RESULTS FOR RESEARCH AND PLANNING: THE NEW JERSEY MODEL

Educational research at a state level is uniquely different from traditional conceptualizations of research. There is seldom the luxury to conduct experimental or quasi-experimental research as the turn-around time requirements and the generally limited focus of such work does not satisfy state-wide needs. It also differs from institutional research in that our efforts are directly policy oriented, deal with the educational processes and products, and includes a greater degree of inferential work. Though relying upon a management information system, the research arm must extend beyond this necessary foundation.

The state educational research function must embrace elements of all these models. It differs primarily in that it is designed to provide decision makers with rapid and comprehensive descriptive and evaluative data in order to provide for effective planning. One of the most frequently occuring problems is that policy decisions and plans are made without a foundation in current and accurate information. The research arm must manipulate existing information and/or collect and analyze new information to provide needed data in the most useful form for the particular problem being faced.

Based on these requirements and the unique situation of state level research, a different model of research activities and procedures is required. The key elements of this situation and the ways in which the model must operate include the following:

1) Research must be geared to educational policies - Most frequently, the research activities undertaken fall into the categories of modeling the effects of new policy directions or conducting field trials of new policies. With the financial crises in New Jersey, we must closely focus our limited resources in tightly defined areas. At the same time that the research arm is somewhat restricted in direction, the impact on educational operations is more direct than normally found in educational research.

2) Quick response times - While tommorow's problems can sometimes be easily predicted, unanticipated introductions of education related bills in the legislature is a constant fact of life. This often requires extremely quick research efforts to investigate previous findings, analyze existing information, and report information in a very rapid fashion. For example, a minimum standards bill has been rapidly introduced and passed the lower house. Consequently, we were asked to re-evaluate our basic skills mastery data, review the policy issues and examine administrative procedures from other states within a two week time frame.

3) Comprehensive and Accurate Management Information Systems - A current and accurate management information system is absolutely essential to state level research efforts. The implications of this statement include complete information on over 600 districts and 2600 schools for 1,500,000 students. For these components, separate data

bases must be maintained for finances, school operations, assessment scores, staffing, federal programs, facilities, etc. Maintaining data bases on this scope is a demanding but necessary task if we are to provide timely information to educational decision makers.

The concept is to try to anticipate any possible need for information and to develop a flexible and comprehensive data base which can be used for all. We will probably never reach the point where we will be totally comprehensive and free of surprises: Unfortunately, we were not able to supply immediate information on the transcendental meditation programs in the State when legal action was pursued.

4) High Benefit Programs - At the same time that a rapid response capability for fast-breaking issues must be maintained, we must selectively develop major projects which will meet the information needs of a broad variety of programs. Our profile and longitudinal study of high school seniors, for example, provides information on the basic skills issue; secondary and post-secondary articulation and planning data; labor market planning; and school, district and program evaluations.

5) Continued Reprioritization - At the same time that tight turn-around times must be maintained, the specific elements under study are constantly being re-ordered. For example, pressing legislative demands required a study of test-based funding. Other on-going efforts were

temporarily held while extremely intense work was conducted over a short time period. The biggest problem in these cases is balancing the requirements for maintaining on-going efforts while focusing on the latest set of issues and policy concerns.

6) Breadth and Depth - One of the biggest research and planning information problems faced is the swap-off between breadth and depth. Comprehensive and broad ranging data bases generally do not have the level of detail necessary for program level decision making. For example, our financial files do not go below the district level at this time while the only comprehensive information on the student level is the statewide test scores. While our Management Information System is being over-hauled to remedy these problems, we have developed the first of our comprehensive urban data bases to overcome our problems of depth. This file is built on the student level and contains over 4300 cases. Each case contains a complete three year history of the student including family data, socioeconomic data, achievement scores, personal attributes, the student's teachers and their characteristics, building and principal characteristics, etc. This highly detailed information is used not only to examine the effects of particular programs but also to model projected policy changes in the educational environment. Our plans are to develop similar in-depth data bases for the various socioeconomic levels and community types found in the

State. While it is impractical to collect detailed information at all levels, by sinking "wells" at carefully selected points we will be able to make reasonable inferences at all levels.

7) Research Support for Other Activities - We simply do not have the research capabilities to support the various concerns and activities of the entire state educational enterprise. Consequently, a strong component of our research program is to provide consultative, computer, and statistical support to other programs. As is well known, a great deal of research work is not the least bit glamorous and is also very labor intensive. We provide basic guidance on research design, instrumentation, sampling, and data collection. The issuing agent then procedes to conduct the research. We then provide statistical and interpretive work as needed. Examples of this type of activity are found in the evaluation of Right-to-Read programs, Title I programs, and evaluations of our Educational Improvement Network. This method of cooperative activities allows the highest productivity with our limited research and statistical expertise.

8) Utilizing external resources in the State - Again, due to limited resources, we actively solicit and engage other educational researchers throughout the State to conduct research in areas of our interest. Quite frequently, external researchers approach the department for support. At the same time that we receive needed assistance, the researcher is supported through access to central files and broader access to school systems. For example,

Educational Testing Service research is often consonant with our work. Educational researchers at Rutgers also conduct mutually beneficial research projects.

9) Dissemination and Diffusion - Closely coupled with the dissemination and diffusion network for state and federal projects, the educational research office also provides a monthly newsletter to educational decision makers for the purpose of keeping them informed of the research background and the current research efforts being conducted on topical issues. An occasional paper series is now under development to more thoroughly address current issues. This informational net is absolutely essential if we are to accomplish our broad set of research goals and avoid unnecessary and costly duplication.

EDUCATIONAL PROCESSES AND PRODUCTS

The foregoing research and planning model is one that has proven to work within the opportunities and constraints of one State Department of Education. In applying this model to the educational system of New Jersey, it is necessary to address both the process and the products of the educational system:

A. The Process

New Jersey has a somewhat unique educational situation. The state constitution requires that all children have a "thorough and efficient" education. As you might expect, this requirement for a quality education was challenged in court. The result was not only a financial system over-haul, but also a requirement for "thorough and efficient" (T&E) educational processes in the state's schools and districts. The state agency with the regional and county centers has the responsibility of monitoring these focal efforts.

The basic process for all schools and districts includes:

- ✓ a contextual evaluation of the local educational system with the establishment of educational goals through community involvement
- ✓ the derivation of objectives from these goals
- ✓ the assessment of the degree of attainment of these objectives
- ✓ the development and implementation of programs to meet the objectives
- ✓ the evaluation of the effectiveness of these programs

This comprehensive program involves an annual plan based on a limited set of criteria and a five-year comprehensive cycle which calls for total review of the local educational system.

In addition to the monitoring, auditing, and approval system now getting underway, our research efforts must be focused on the effectiveness of this system. Two different research foci must be distinguished: First, the process must be evaluated as a process - both as a total entity and for each step individually. The second component is addressed to whether the process results in improved education or not. On one hand, it is possible to perform all of the process steps without really providing an improved education. The converse may also occur in that the process (as presented in reports) may appear to be woefully inadequate while the actual educational program may be satisfactory.

It is one of the tasks of educational research to investigate the efficacy of each step of the model internally while also relating these steps to the products. With the over 600 districts and 2600 schools, a very comprehensive and complete data file is required. This capability is now being redeveloped through our T&E efforts and through our Management Information System overhaul. At the same time, the extreme divergence of goal-setting techniques, assessment instruments, program objectives, etc. complicates the process to an extreme degree. This

diversity, however provides an exceptionally fertile ground for comprehensive investigations of different educational environments.

B. Products

Without any type of common touchstone, the use of the "T&E" system for statewide research would be an impossible undertaking. Fortunately, the statewide testing program allows a common basis for comparisons. Unfortunately, the tests are restricted to performance referenced measures of reading and mathematics. The tests do, however, report scores for classrooms, schools, and districts with comparative data for the state, county, type of community, and socioeconomic level.

In addition to test data, the state has initiated a profile and longitudinal study of high school seniors in order to give us a comprehnsive picture of the "products" of the public education system. This information covers a wide variety of areas related to school programs, school success, future plans, degree of preparation, family data, etc.

COMBINING THE ELEMENTS

A research program with extensive and accurate data coupled with process and product evaluations provides a comprehensive and complete picture of our educational environment. With the assessment data on every school and district as well as the school descriptor and program data, we can partition the information in an

infinite variety of ways to address specific problems. For example, we were faced with a rapid need to conduct an evaluation of the Right-to-read program. It was a straight-forward task to identify the program schools, the time of implementation, the intensity of the program and partition the schools into suitable socioeconomic and community groupings. From this point, a control sample of schools was drawn and comparisons made using the statewide test scores. A study of the effectiveness and concentration of federal projects was conducted in a similar straight-forward manner.

Unfortunately, reality is never as neat and complete as the model. All applications do not have such parsimonious conclusions. The T&E component is still in field test and a well operating system also masks the grinding labor and frustration of building and maintaining comprehensive data bases.

It would be incorrect to imply that the above described data oriented system can provide answers to all state level problems and concerns. There are problems and processes that have to be addressed which require other means and methods:

1) Non-quantifiable data - Obviously, paper-and-pencil measures of achievement and survey results will tell us little of the affective learning which goes on in the school. Likewise, critical elements such as school climate will not show up in the data. Consequently, field and case work is used to meet these

types of requirements.

2) Program evaluations (process and product)
It is relatively easy to identify schools using certain programs by socioeconomic status and other relevant variables in order to ascertain which programs are working. The shortcoming of this procedure is that the intensity, quality, and acceptance of the program tends to wash-out the results. This type of problem must be met with the development and use of special instruments. For example, a second study with our right-to-read program concentrates on the planning and management of the programs, involvement of key actors, program comprehensiveness, methods and techniques of instruction, assessment and evaluation procedures, staff-training, continuity or follow-up, teacher competency, community involvement, etc.

3) Data intensity - As noted above, state level files do not have the depth of information needed for many decisions. Consequently, this information is being supplemented by intense individual student level data which is used to model the entire educational environment inclusive of external influences.

4) Literature/Data Analyses Combinations - In many cases, it is simply not feasible or economical to research areas which have a strong literature. For example, members of the legislature requested information on school and class size. Innumerable studies have been conducted in this area. Our

graduate student intern program is used here to do rapid searches of both primary and secondary documents while simultaneously developing a comprehensive and recent profile of the New Jersey situation.

CONCLUSION

The educational research system, the process and product requirements of the "thorough and efficient" system, and the special efforts designed to fill gaps provides a comprehensive and flexible system for investigating educational concerns in the State.

The basic skills issue, for example, is a case where the system was brought to bear on short time lines to provide policy information. The research capability was used to review previous findings, analyze testing data by community type and by socioeconomic status, identify grade levels and locations of strengths and weaknesses, evaluate programs and processes, and correlate educational and non-educational variables with success.

The capability is now being employed to model the effects of the state compensatory education bill. Areas and avenues under exploration include methods of determining funding level, procedures for administration, program emphases, and success of programs.

The aim of the state educational research arm is to provide timely, accurate, and easily comprehensible data

to educational decision makers. Traditional problems have been in collecting and maintaining this data capability The procedures we have developed and implemented have shown themselves to be successful in meeting these unique research and planning demands.

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